UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/898,894	WATANABE ET AL.
	Examiner	Art Unit
	Etienne P LeRoux	2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-19_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-19_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _03 July 2001_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _3_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a log in the backup memory containing storage system transaction entries accumulated after a consistency point at which time results of **the transaction entries** are committed to the disk array" and furthermore, "an initiator process that establishes a swarm of messages with respect to **the transaction request entries** and delivers the swarm to the file system." There is insufficient antecedent basis for "the transaction entries" and also for "the transaction request entries." Still further, it is unclear whether the transaction entries are one and the same thing as the transaction request entries.

Claim 1 recites "A system for replay of a backup memory in **a storage system**" and "a log in the backup memory containing **storage system** transaction entries." It is unclear whether the above storage system is a single storage system or multiple storage systems. If it is a single storage system, the above limitation should be rewritten "a log in the backup memory containing **the** storage system transaction entries."

Claims 2-9 are rejected for being dependent from a rejected base claim.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-4 and 8-19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat

No 5,440,726 issued to Fuchs et al (hereafter Fuchs '726).

Claim 1:

Fuchs '726 discloses:

- a log in the backup memory containing storage system transaction entries accumulated

    after a consistency point at which time results of the transaction entries are committed to

    the disk array [col 3, lines 28-33]

- an initiator process that establishes a swarm of messages with respect to the transaction

    request entries and delivers the swarm to the file system [abstract],

- and a disk information retrieval process in the file system that is carried out on the swarm

    of messages in parallel [Fig 1, items 50, 52, 54 and col 5, lines 57-65]

Claim 2:

Fuchs '726 discloses wherein each of the messages of the swarm is identified by a

transaction block including a pointer to one of the transaction request entries in the log,

respectively, and a state that indicates whether each of the messages is one of (a) newly

transferred to the file system [col 3, lines 17-26].

Claim 3:

       Fuchs '726 discloses wherein the prerequisite event is completion of the load phase and a

modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 4:

       Fuchs '726 discloses wherein the initiator process is adapted to retransfer each of the

messages incapable of being subject to a load phase until the prerequisite event occurs to the file

system for completion of the load phase after the prerequisite event occurs respectively [col 16,

lines 39-53]

Claim 8:

       Fuchs '726 discloses wherein the backup memory comprises a non-volatile random

access memory (NVRAM) [col 3, line 5].

Claim 9:

       Fuchs '726 discloses wherein the storage system comprises a network storage appliance

[title]

Claim 10:

       Fuchs '76 discloses:

- accumulating in a log in the backup memory, storage system transaction request entries
  after a consistency point at which time results of the transaction request entries are
  committed to the disk array [col 3, lines 28-33]

- establishing a swarm of messages with respect to the transaction request entries and
  delivering the swarm to the file system [abstract] and

- performing a disk information retrieval process of the file system o the swarm of

    messages in parallel [Fig 1, items 50, 52 54 and col 5, lines 57-65].

Claim 11:

Fuchs '726 discloses wherein each of the messages of the swarm is identified by a

transaction block including a pointer to one of the transaction request entries in the log,

respectively, and a state that indicates whether each of the messages is one of (a) newly

transferred to the file system [col 3, lines 17-26].

Claim 12:

Fuchs '726 discloses wherein the prerequisite event is completion of the load phase and a

modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 13:

Fuchs '726 discloses wherein the initiator process is adapted to retransfer each of the

messages incapable of being subject to a load phase until the prerequisite event occurs to the file

system for completion of the load phase after the prerequisite event occurs respectively [col 16,

lines 39-53]

Claim 14:

Fuchs '726 discloses wherein the storage system comprises a network storage appliance

[Fig 1, item 12 and col 5, lines 57-65]

Claim 15:

Fuchs '726 discloses:

- accumulating in a log in the backup memory, storage system transaction request entries

  after a consistency point at which results of the transaction request entries are committed

  to the disk array [col 3, lines 28-33]

- establishing a swarm of messages with respect to the transaction request entries and

  delivering the swarm to the file system [abstract] and

- performing a disk information retrieval process of the file system on the swarm of

  messages in parallel [Fig 1, items 50, 52 and 54, and col 5, lines 47-65].

Claim 16:

Fuchs '726 discloses:

establishing for each of the messages of the swarm, a transaction block including a pointer to one

of the transaction request entries in the log, respectively, in the log and a state that indicates

whether each of the messages is one of :

(a) newly transferred to the file system [col 3, lines 17-26],

Claim 17:

Fuchs '726 discloses wherein the prerequisite event is completion of the load phase and a

modify phase with respect to another of the messages [col 14, lines 11-32]

Claim 18:

Fuchs '726 discloses wherein the initiator process is adapted to retransfer each of the

messages incapable of being subject to a load phase until the prerequisite event occurs to the file

system for completion of the load phase after the prerequisite event occurs respectively [col 16,

lines 39-53]

Claim 19:

Fuchs '726 discloses wherein the storage system comprises a network storage appliance

[Fig 1, item 12 and col 5, lines 57-65].

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs '726 in view

of Pub No 2003/0131190 issued to Park et al (hereafter Park '190).

Claim 5:.

Fuchs '726 discloses the elements of claim 4 as noted above.

Fuchs '726 fails to disclose wherein the initiator is adapted to establish a skip state with

respect to a skipped messages for which a portion of the disk array associated therewith is

unavailable, the skip state thereby omitting the skipped messages from the swarm

Park '190 discloses wherein the initiator is adapted to establish a skip state with respect

to a skipped messages for which a portion of the disk array associated therewith is unavailable,

the skip state thereby omitting the skipped messages from the swarm [paragraph 9].

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify Fuchs '726 to include wherein the initiator is adapted to establish a skip

state with respect to a skipped messages for which a portion of the disk array associated

therewith is unavailable, the skip state thereby omitting the skipped messages from the swarm as

taught by Park '190.

The ordinarily skilled artisan would have been motivated to modify Fuchs '726 per the

above for the purpose of purpose of skipping defective sectors [paragraph 9].

5.   Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs

'726 in view of US Pat No 6,330,570 issued to Crighton (hereafter Crighton '570).

Claim 6:

Fuchs '726 discloses the elements of claim 4 as noted above.

Fuchs '726 fails to disclose wherein the file system includes a panic state adapted to alert

an operator if a message received from the initiator in the swarm is a message incapable of being

subject to a load phase until a prerequisite event occurs.

Crighton '570 discloses a failure in reading a file or writing the file to the backup

apparatus triggers a warning message [col 2, lines 34-36].

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the combination of Fuchs '726 and Crighton '570 to obtain wherein the file

system includes a panic state adapted to alert an operator if a message received from the initiator

in the swarm is a message incapable of being subject to a load phase until a prerequisite event

occurs.

The ordinarily skilled artisan would have been motivated to modify the combination of

Fuchs '726 and Crighton '570 as per the above for the purpose of alerting an operator if a

backup has not been successfully completed [col 2, lines 26-30].

Claim 7:

Fuchs '726 discloses the elements of claim 4 as noted above.

Fuchs '726 fails to disclose wherein the file system includes a panic state adapted top

alert an operator if a message is retransferred by the initiator process is a message incapable of

being subject to a load phase until a prerequisite event occurs.

Crighton '570 discloses a failure in reading a file or writing the file to the backup

apparatus triggers a warning message [col 2, lines 34-36].

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the combination of Fuchs '726 and Crighton '726 to include wherein the file

system includes a panic state adapted top alert an operator if a message is retransferred by the

initiator process is a message incapable of being subject to a load phase until a prerequisite event

occurs.

The ordinarily skilled artisan would have been motivated to modify the combination of

Fuchs '726 and Crighton '570 as per the above for the purpose of alerting an operator if a

backup has not been successfully completed [col 2, lines 26-30].

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620.

The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

October 17, 2003

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